EXHIBIT 8

UMBRA TECHNOLOGIES LTD.'S FIRST INFRINGEMENT ANALYSIS

U.S. Patent No. 11,146,632– Defendant VMware Inc. - UMBRA Technologies Ltd. ("UMBRA")

Claims 1 & 7

UMBRA Technologies Ltd. ("UMBRA") provides evidence of infringement of claims 1 and 7 of U.S. Patent No. 11,146,632 (hereinafter "the '632 patent") by VMware Inc. ("VMware"). In support thereof, UMBRA provides the following claim charts.

"Accused Instrumentalities" as used herein refers to at least VMware systems and methods, including one or more hardware and software products for network virtualization and related services, which by way of example include but are not limited to VMware SD-WAN, (*see, e.g.*, VMware SD-WAN, https://www.vmware.com/products/sd-wan.html), VMware NSX software-defined data center (*see, e.g.*, VMware NSX, https://www.vmware.com/products/nsx.html), VMware vSphere (*see, e.g.*, VMware vSphere, https://www.vmware.com/products/vsphere.html), and VMware Horizon (*see, e.g.*, VMware Horizon, https://www.vmware.com/products/horizon.html) and related earlier versions (the "Accused Instrumentalities"). These claim charts demonstrate VMware's infringement, and provide notice of such infringement, by comparing each element of the asserted claims to corresponding components, aspects, and/or features of the Accused Instrumentalities. These claim charts are not intended to constitute an expert report on infringement. These claim charts include information provided by way of example, and not by way of limitation.

The analysis set forth below is based only upon information from publicly available resources regarding the Accused Instrumentalities, as VMware has not yet provided any non-public information. An analysis of VMware's (or other third parties') technical documentation and/or software source code may assist in fully identifying all infringing features and functionality. Accordingly, UMBRA reserves the right to supplement this infringement analysis once such information is made available to UMBRA. Furthermore, UMBRA reserves the right to revise this infringement analysis, as appropriate, upon issuance of a court order construing any terms recited in the asserted claims. UMBRA provides this evidence of infringement and related analysis without the benefit of claim construction or expert reports or discovery. UMBRA reserves the right to supplement, amend or otherwise modify this analysis and/or evidence based on any such claim construction or expert reports or discovery.

Note: All internet sources last accessed and downloaded July 31, 2023.

UMBRA TECHNOLOGIES LTD.'S FIRST INFRINGEMENT ANALYSIS

U.S. Patent No. 11,146,632– Defendant VMware Inc. - UMBRA Technologies Ltd. ("UMBRA")

Claims 1 & 7

Unless otherwise noted, UMBRA contends that VMware directly infringes the '632 patent in violation of 35 U.S.C. § 271(a) by selling, offering to sell, making, using, and/or importing the Accused Instrumentalities. The following exemplary analysis demonstrates that infringement. Unless otherwise noted, UMBRA further contends that the evidence below supports a finding of indirect infringement under 35 U.S.C. §§ 271(b) and/or (c), in conjunction with other evidence of liability under one or more of those subsections. VMware makes, uses, sells, imports, or offers for sale in the United States, or has made, used, sold, imported, or offered for sale in the past, without authority, or induces others to make, use, sell, import, or offer for sale in the United States, or has induced others to make, use, sell, import, or offer for sale in the past, without authority products, equipment, or services that infringe claims 1 and 7 of the '632 patent, including without limitation, the Accused Instrumentalities.

Unless otherwise noted, UMBRA believes and contends that each element of each claim asserted herein is literally met through VMware's provision of the Accused Instrumentalities. However, to the extent that VMware attempts to allege that any asserted claim element is not literally met, UMBRA believes and contends that such elements are met under the doctrine of equivalents. More specifically, in its investigation and analysis of the Accused Instrumentalities, UMBRA did not identify any substantial differences between the elements of the patent claims and the corresponding features of the Accused Instrumentalities, as set forth herein. In each instance, the identified feature of the Accused Instrumentalities performs at least substantially the same function in substantially the same way to achieve substantially the same result as the corresponding claim element.

To the extent the chart of an asserted claim relies on evidence about certain specifically identified Accused Instrumentalities, UMBRA asserts that, on information and belief, any similarly functioning instrumentalities also infringes the charted claim. UMBRA reserves the right to amend this infringement analysis based on other products made, used, sold, imported, or offered for sale by VMware. UMBRA also reserves the right to amend this infringement analysis by citing other claims of the '632 patent, not listed in the claim chart, that are infringed by the Accused Instrumentalities. UMBRA further reserves the right to amend this infringement analysis by adding, subtracting, or otherwise modifying content in the "Accused Instrumentalities" column of each chart.

UMBRA TECHNOLOGIES LTD.'S FIRST INFRINGEMENT ANALYSIS

U.S. Patent No. 11,146,632– Defendant VMware Inc. - UMBRA Technologies Ltd. ("UMBRA")

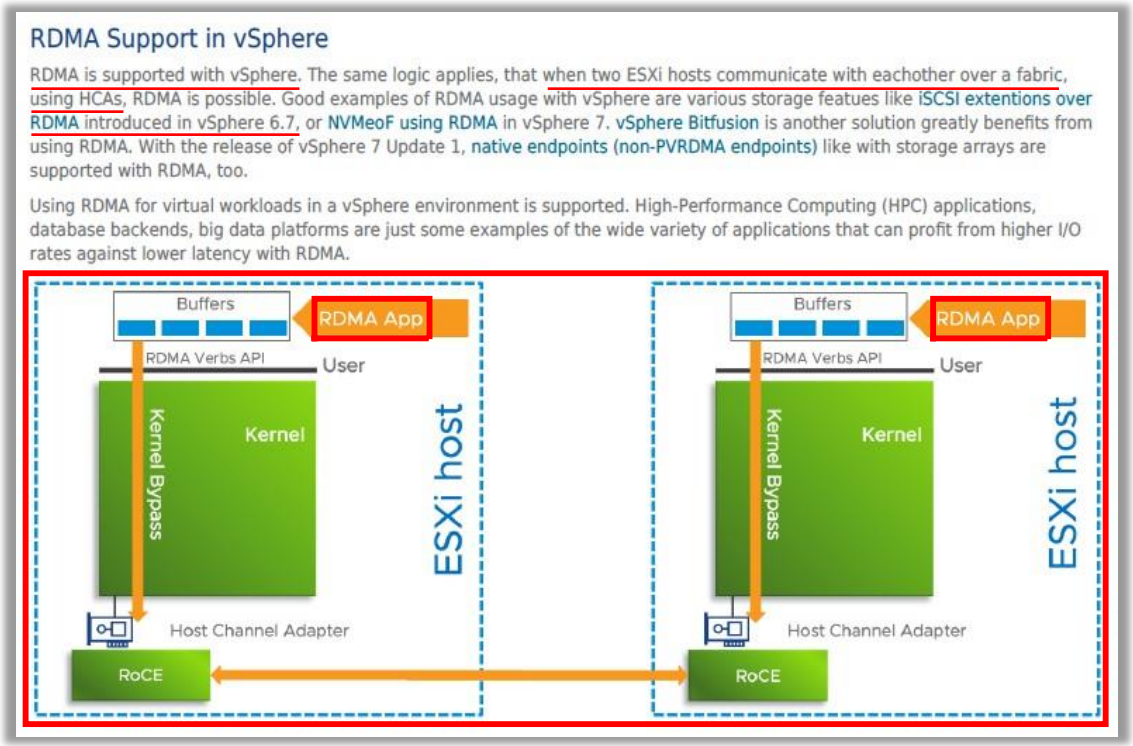
Claims 1 & 7

Claim #1	Accused Instrumentalities
Indep.Cl. 1 1-p 1. A network system for providing data beacons, comprising:	"VMware vSphere is a suite of software components for virtualization. These include ESXi, vCenter Server, and other software components that fulfill several different functions in the vSphere environment." VMware vSphere is a suite of software components for virtualization. These include ESXi, vCenter Server, and other software components that fulfill several different functions in the vSphere environment. Source: vCenter Server and Host Management, p.13 https://docs.vmware.com/en/VMware-vSphere/7.0/vsphere-esxi-vcenter-server-703-host-management-guide.pdf (annotations added) vSphere 6.5 and later releases support RDMA (Remote Direct Memory Access). This technology enables ESXi hosts to communicate "RDMA App" data, i.e., data beacons, over a fabric, i.e., a network system, using HCAs, directly from/to ESXI host's memory without CPU intervention. By doing so, latency is lowered while data throughput is increased. Remote Direct Memory Access (RDMA) is a revolutionary technology that enables host devices (devices connected over a network) to read and write data present in their main memory without the CPU's and the operating system's involvement. In a nutshell, computers connected over a network using a particular type of network card can bypass remote system processors and operating system while reading and writing data to their main memory at the same time. RDMA technology is used extensively in performance-oriented environments. Its unique selling point is low latency while transferring information at the memory to memory level between compute nodes. This is possible because the data transfer function is offloaded to a specially designed network adaptor hardware, also known as Host Channel Adaptor (HCA) Host Channel Adaptors can interact directly with the memory of applications. This results in network data transfer to happen without consuming any CPU cycles, thus providing a more efficient and faster way to move data between networked computers at lower latency and CPU utilization. Source: The Fast Lane for Data Transfer –Paravirtual RDMA(PVRDMA)Support for Native Endpoints., https://blogs.vmware.com/vsphere/2020/10/para-virtual-rdma-support-for-native-endpoints.html (annotations added)

UMBRA TECHNOLOGIES LTD.'S FIRST INFRINGEMENT ANALYSIS

U.S. Patent No. 11,146,632– Defendant VMware Inc. - UMBRA Technologies Ltd. ("UMBRA")

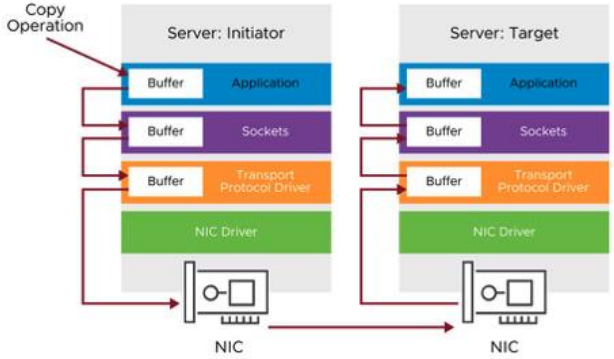
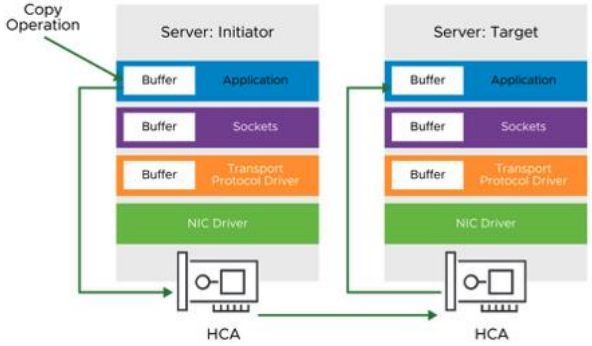
Claims 1 & 7

1-p Cont.	 Source: The Basics of Remote DirectMemory Access (RDMA) in vSphere), https://core.vmware.com/api/checkuseraccess?referer=/sites/default/files/resource/the_basics_of_remote_direct_memory_access_rdma_in_vsphere_noindex.pdf_ (annotations added) The example cited above it based on ROCE – which is RDMA over Converged Internet but excludes InfiniBand or other methodology. Below are figures which generically support the RDMA functionality and specify HCA. See: https://blogs.vmware.com/vsphere/2020/10/para-virtual-rdma-support-for-native-endpoints.html

UMBRA TECHNOLOGIES LTD.'S FIRST INFRINGEMENT ANALYSIS

U.S. Patent No. 11,146,632– Defendant VMware Inc. - UMBRA Technologies Ltd. ("UMBRA")

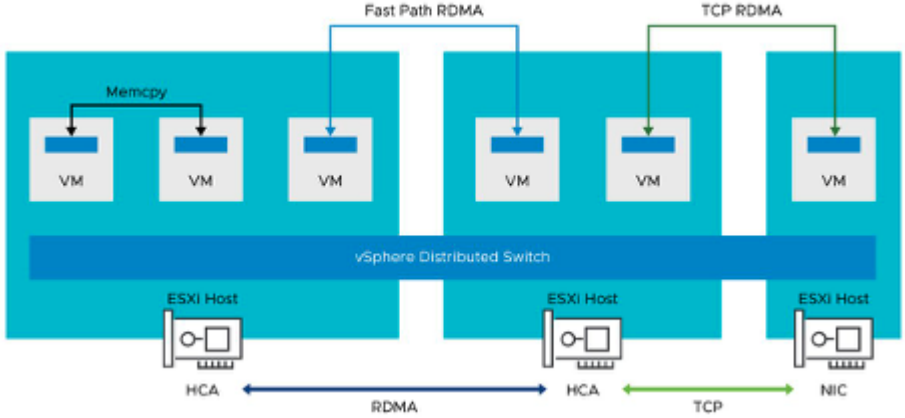
Claims 1 & 7

1-p Cont.	Data transfer without RDMA  Source: https://blogs.vmware.com/vsphere/files/2020/10/Datacopy_without_RDMA.png Data transfer with RDMA  Source: https://blogs.vmware.com/vsphere/files/2020/10/Data_copy_with_rdma.png

UMBRA TECHNOLOGIES LTD.'S FIRST INFRINGEMENT ANALYSIS

U.S. Patent No. 11,146,632– Defendant VMware Inc. - UMBRA Technologies Ltd. ("UMBRA")

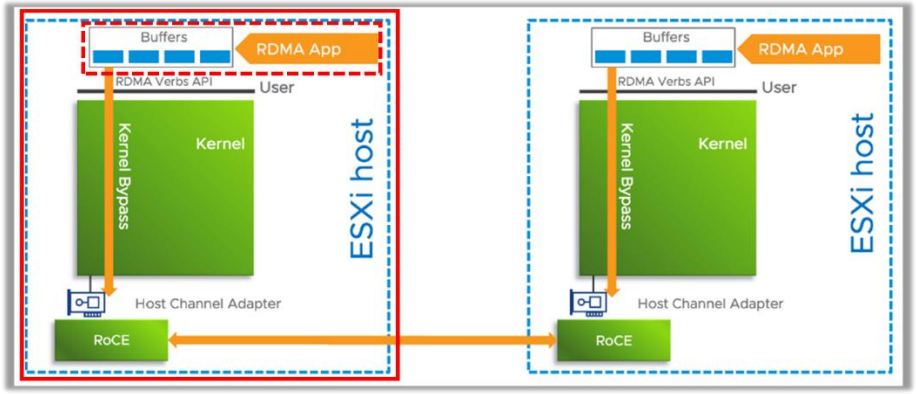
Claims 1 & 7

1-p Cont.	The following demonstrates the two different transports: RDMA – file-based transfer by-passing the stack TCP – traditional packetized transfer through the stack and the NIC (at both ends) RDMA between VMs is called Para-Virtual RDMA  Source: https://blogs.vmware.com/vsphere/files/2020/10/RDMA-between-VMs-is-called-PVRDMA-.png

UMBRA TECHNOLOGIES LTD.'S FIRST INFRINGEMENT ANALYSIS

U.S. Patent No. 11,146,632– Defendant VMware Inc. - UMBRA Technologies Ltd. ("UMBRA")

Claims 1 & 7

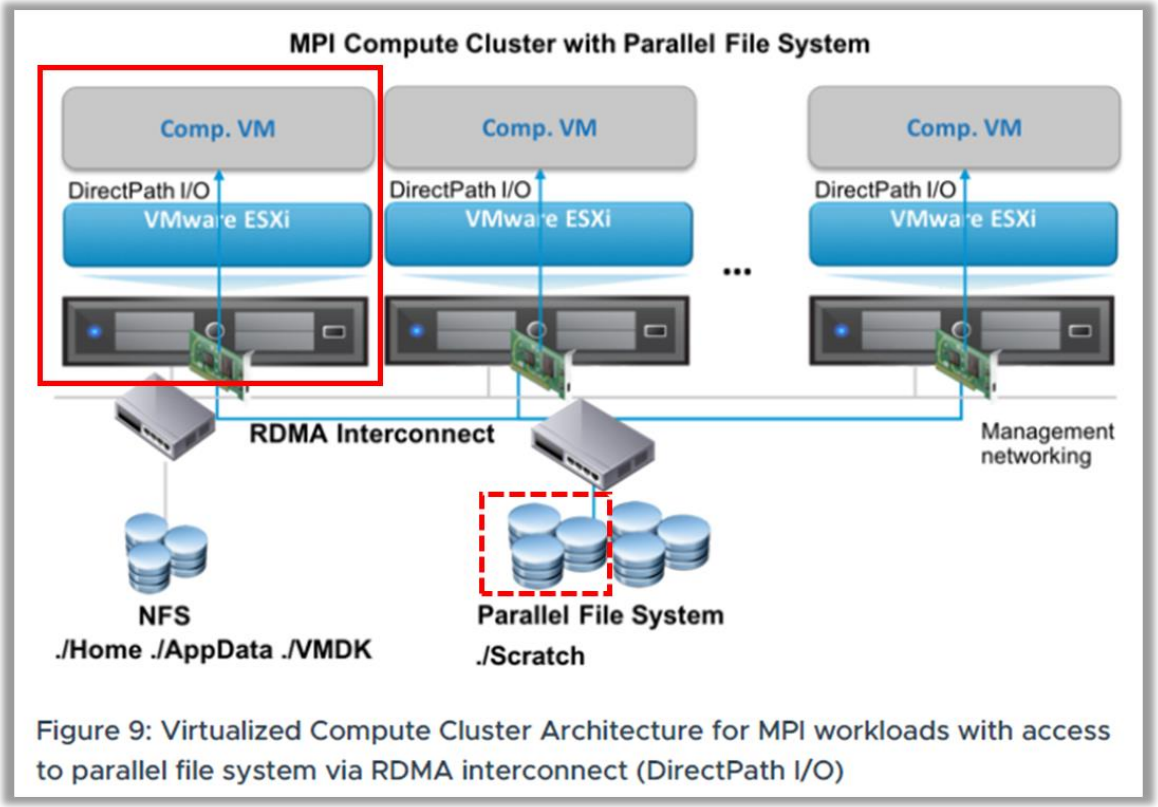
1-a a first node comprising a first read queue, a first write queue, and a first parallel file system;	A "VMware ESXi" host, i.e., first node, comprises "RDMA App Buffers" organized as first read queue and first write queue" and a first "Parallel File System." "The parallel file system is used as scratch space and intended for work that requires optimized I/O", e.g., data beacon messaging as illustrated in Figure 9 depicting the sample architecture for a virtualized HPC environment that runs MPI (Message Passing Interface) workloads. ESXi and vCenter Server. VMware ESXi is a Type-1 hypervisor installed directly on the bare-metal server providing a layer of abstraction for virtual machines to run while mapping host resources such as CPU, memory, storage, and network to each VM. vCenter Server provides centralized management of the hosts and virtual machines, coordinating resources for the entire cluster. Source: Virtualized High PerformanceComputing (HPC) ReferenceArchitecture (Part 1 of 2), https://blogs.vmware.com/apps/2018/09/vhpc-ra-part1.html (annotations added)  Source: The Basics of Remote DirectMemory Access (RDMA) in vSphere), https://core.vmware.com/api/checkuseraccess?referer=/sites/default/files/resource/the_basics_of_remote_direct_memory_access_rdma_in_vsphere_noindex.pdf (annotations added)

Note: All internet sources last accessed and downloaded July 31, 2023.

UMBRA TECHNOLOGIES LTD.'S FIRST INFRINGEMENT ANALYSIS

U.S. Patent No. 11,146,632– Defendant VMware Inc. - UMBRA Technologies Ltd. ("UMBRA")

Claims 1 & 7

1-a Cont.	 Figure 9: Virtualized Compute Cluster Architecture for MPI workloads with access to parallel file system via RDMA interconnect (DirectPath I/O) Source: Virtualized High PerformanceComputing (HPC) ReferenceArchitecture (Part 2 of 2), https://blogs.vmware.com/apps/2018/09/vhpc-ra-part2.html_ (annotations added)

UMBRA TECHNOLOGIES LTD.'S FIRST INFRINGEMENT ANALYSIS

U.S. Patent No. 11,146,632– Defendant VMware Inc. - UMBRA Technologies Ltd. ("UMBRA")

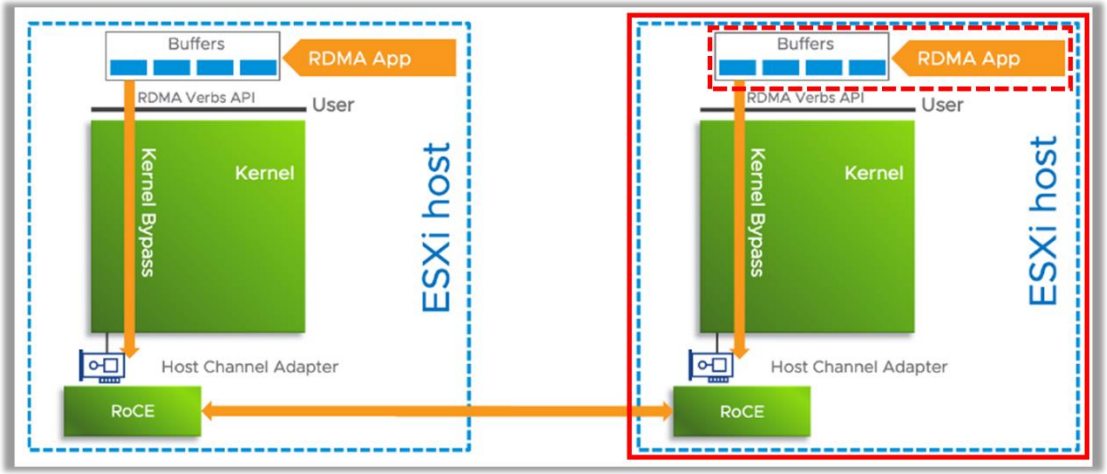
Claims 1 & 7

1-a Cont.	As illustrated in Figure 9, the sample architecture for a virtualized HPC environment that runs MPI workloads consists of: Hardware • Multiple compute nodes – the number of nodes determined by the workload computational needs • Management nodes – a minimum of four nodes is recommended for enterprise-class redundancy. • Existing network storage for VMDK placement and long-term application data storage • Parallel file system for application scratch data (optional) • High-speed interconnects (such as 100 Gb/s Ethernet or RDMA) for achieving low-latency and high-bandwidth for HPC application message exchanges or the accessing parallel file system • Ethernet cards with 10/25 Gb/s connectivity speed for management • GPUs or other accelerators for application acceleration needs (optional) Source: Virtualized High Performance Computing (HPC) Reference Architecture (Part 2 of 2), https://blogs.vmware.com/apps/2018/09/vhpc-ra-part2.html_ (annotations added) The parallel file system is usually used as scratch space and intended for work that requires optimized I/O. These include: workload setup, pre-processing, running, and post processing. Source: Virtualized High Performance Computing (HPC) Reference Architecture (Part 1 of 2), https://blogs.vmware.com/apps/2018/09/vhpc-ra-part1.html_ (annotations added)

UMBRA TECHNOLOGIES LTD.'S FIRST INFRINGEMENT ANALYSIS

U.S. Patent No. 11,146,632– Defendant VMware Inc. - UMBRA Technologies Ltd. ("UMBRA")

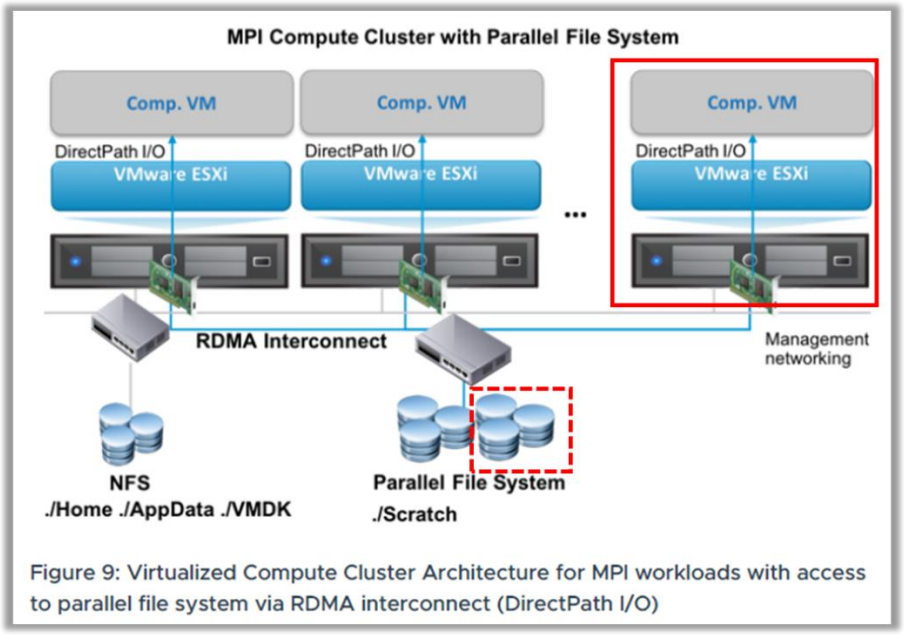
Claims 1 & 7

1-b a second node comprising a second read queue, a second write queue, and a second parallel file system;	A "VMware ESXi" host, i.e., second node, comprises "RDMA App Buffers" organized as second read queue and second write queue" and a second "Parallel File System." "The parallel file system is used as scratch space and intended for work that requires optimized I/O", e.g., data beacon messaging as illustrated in Figure 9 depicting the sample architecture for a virtualized HPC environment that runs MPI (Message Passing Interface) workloads. ESXi and vCenter Server. VMware ESXi is a Type-1 hypervisor installed directly on the bare-metal server providing a layer of abstraction for virtual machines to run while mapping host resources such as CPU, memory, storage, and network to each VM. vCenter Server provides centralized management of the hosts and virtual machines, coordinating resources for the entire cluster. Source: Virtualized High Performance Computing (HPC) Reference Architecture (Part 1 of 2), https://blogs.vmware.com/apps/2018/09/vhpc-ra-part1.html_ (annotations added)  Source: What's New in vSphere 6.7 Core Storage, p.17 https://core.vmware.com/resource/whats-new-vsphere-67-core-storage#sec6913-sub5_ (annotations added)

UMBRA TECHNOLOGIES LTD.'S FIRST INFRINGEMENT ANALYSIS

U.S. Patent No. 11,146,632– Defendant VMware Inc. - UMBRA Technologies Ltd. ("UMBRA")

Claims 1 & 7

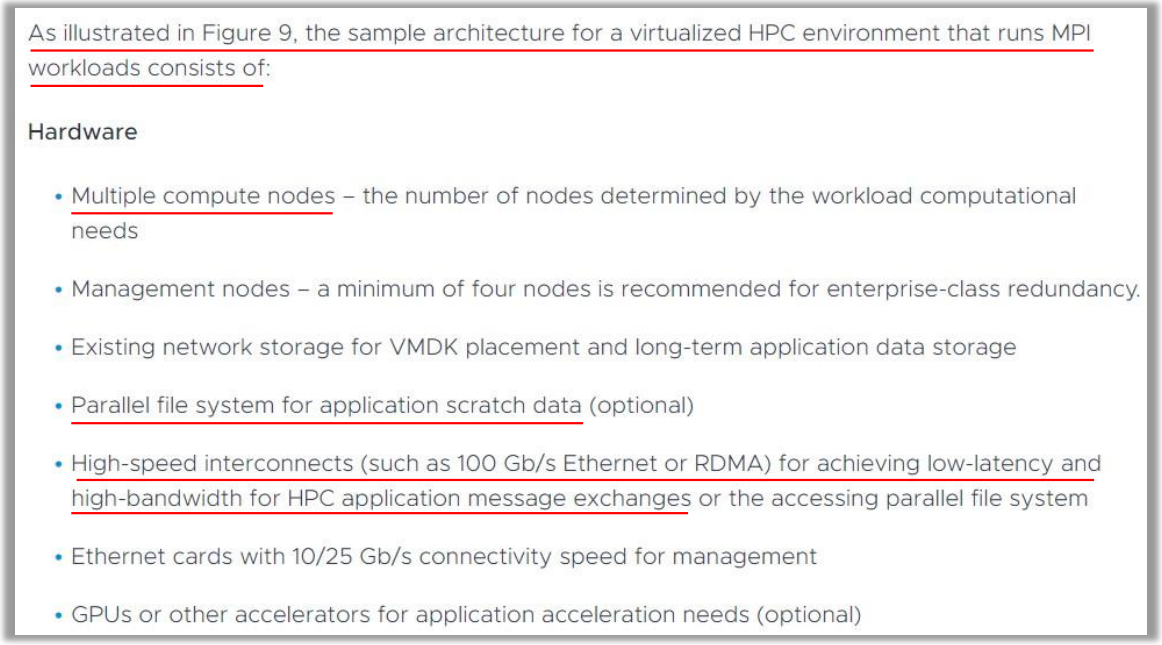
1-b Cont.	 Figure 9: Virtualized Compute Cluster Architecture for MPI workloads with access to parallel file system via RDMA interconnect (DirectPath I/O) Source: Virtualized High Performance Computing (HPC) Reference Architecture (Part 2 of 2), https://blogs.vmware.com/apps/2018/09/vhpc-ra-part2.html (annotations added)

 Note: All internet sources last accessed and downloaded July 31, 2023.

UMBRA TECHNOLOGIES LTD.'S FIRST INFRINGEMENT ANALYSIS

U.S. Patent No. 11,146,632– Defendant VMware Inc. - UMBRA Technologies Ltd. ("UMBRA")

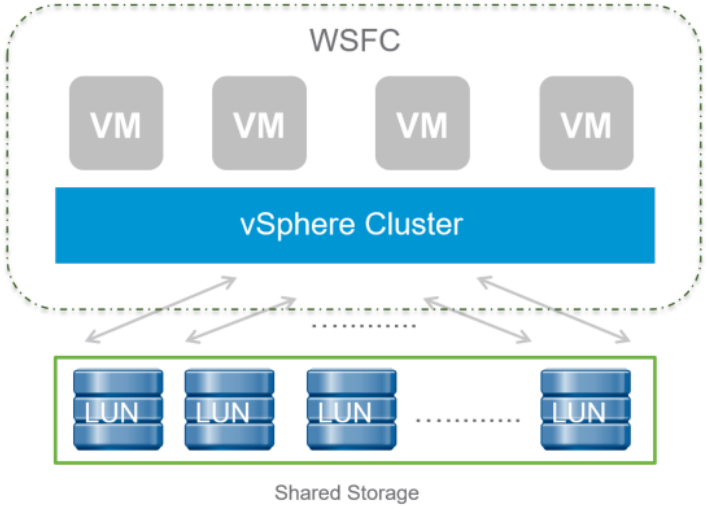
Claims 1 & 7

1-b Cont.	 Source: Virtualized High Performance Computing (HPC) Reference Architecture (Part 2 of 2), https://blogs.vmware.com/apps/2018/09/vhpc-ra-part2.html (annotations added)

UMBRA TECHNOLOGIES LTD.'S FIRST INFRINGEMENT ANALYSIS

U.S. Patent No. 11,146,632– Defendant VMware Inc. - UMBRA Technologies Ltd. ("UMBRA")

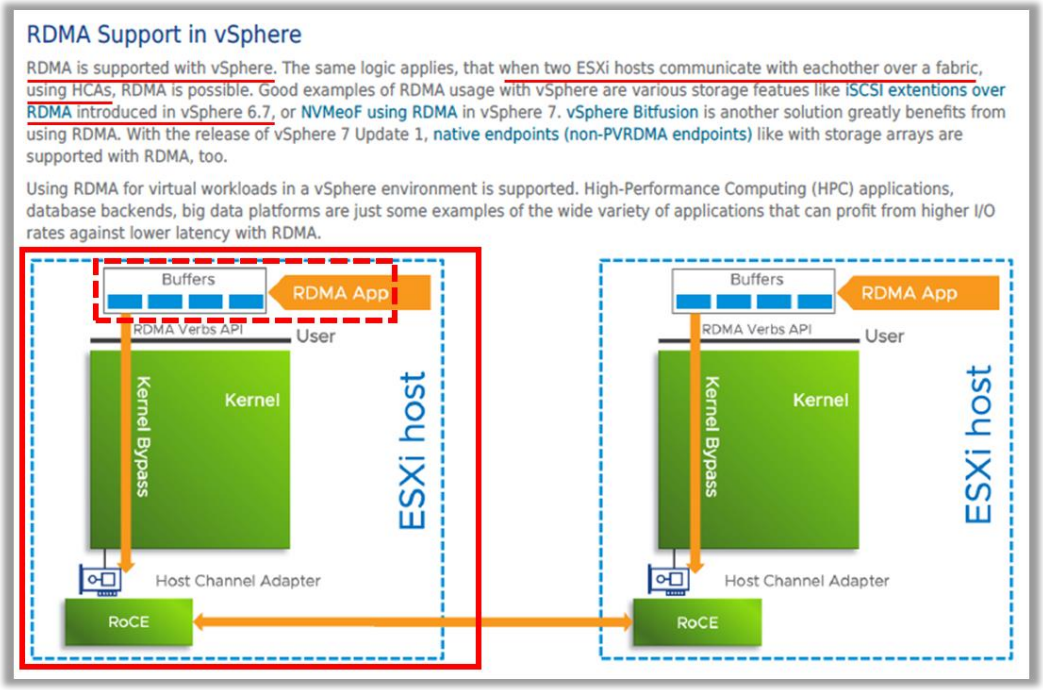
Claims 1 & 7

1-b Cont.	The parallel file system is usually used as scratch space and intended for work that requires optimized I/O. These include: workload setup, pre-processing, running, and post processing. Source: Virtualized High Performance Computing (HPC) Reference Architecture (Part 1 of 2), https://blogs.vmware.com/apps/2018/09/vhpc-ra-part1.html (annotations added) Also see: https://core.vmware.com/resource/whats-new-vsphere-67-core-storage#sec6913-sub3  Image Address: https://core.vmware.com/sites/default/files/image(195).png

UMBRA TECHNOLOGIES LTD.'S FIRST INFRINGEMENT ANALYSIS

U.S. Patent No. 11,146,632– Defendant VMware Inc. - UMBRA Technologies Ltd. ("UMBRA")

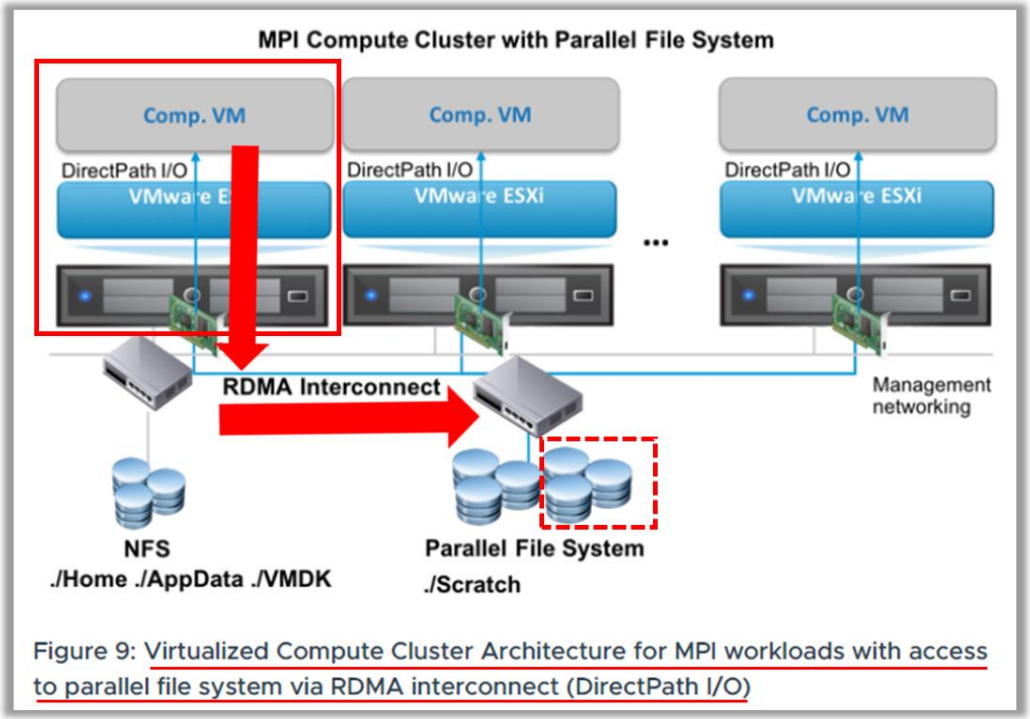
Claims 1 & 7

1-c wherein the first node writes first data from the first write queue to the second parallel file system; and	The "VMware ESXi" host, i.e., first node, takes first data from the "RDMA App Buffers", i.e., first write queue and writes it to the second "Parallel File System." The "VMware ESXi" host, i.e., first node, writes the first data to the second "Parallel File System" by utilizing the "RDMA Interconnect over a Host Channel Adapter (HCA).  Source: The Basics of Remote Direct Memory Access (RDMA) in vSphere), p.5 https://core.vmware.com/api/checkuseraccess?referer=/sites/default/files/resource/the_basics_of_remote_direct_memory_access_rdma_in_vsphere_noindex.pdf_ (annotations added)

UMBRA TECHNOLOGIES LTD.'S FIRST INFRINGEMENT ANALYSIS

U.S. Patent No. 11,146,632– Defendant VMware Inc. - UMBRA Technologies Ltd. ("UMBRA")

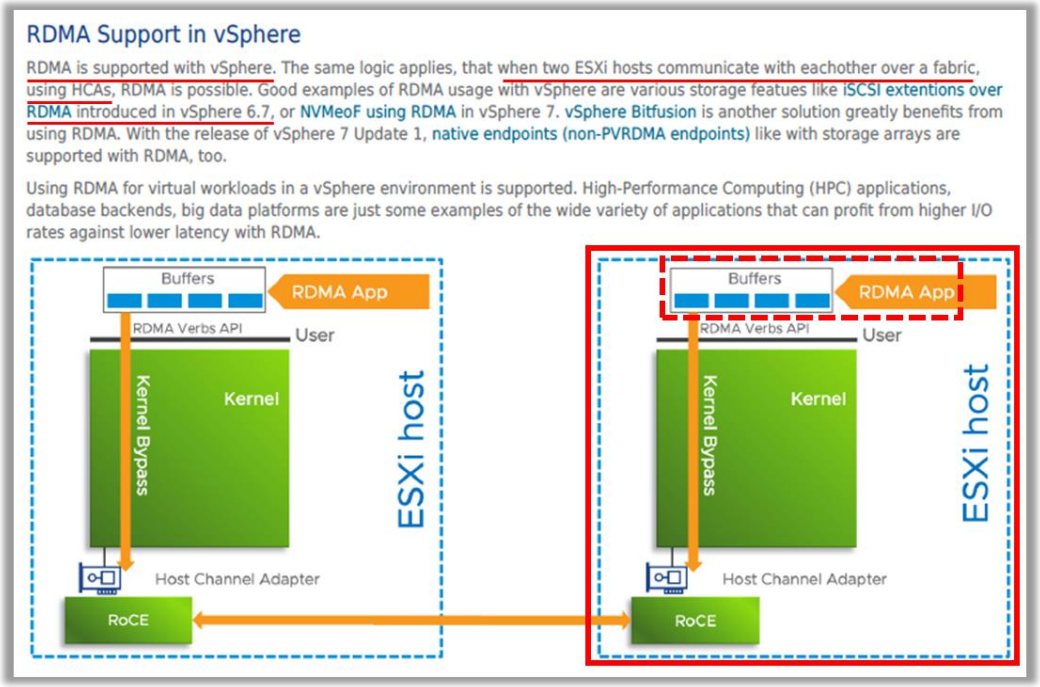
Claims 1 & 7

1-c Cont.	 Figure 9: Virtualized Compute Cluster Architecture for MPI workloads with access to parallel file system via RDMA interconnect (DirectPath I/O) Source: Virtualized High Performance Computing (HPC) Reference Architecture (Part 2 of 2), https://blogs.vmware.com/apps/2018/09/vhpc-ra-part2.html (annotations added)

UMBRA TECHNOLOGIES LTD.'S FIRST INFRINGEMENT ANALYSIS

U.S. Patent No. 11,146,632– Defendant VMware Inc. - UMBRA Technologies Ltd. ("UMBRA")

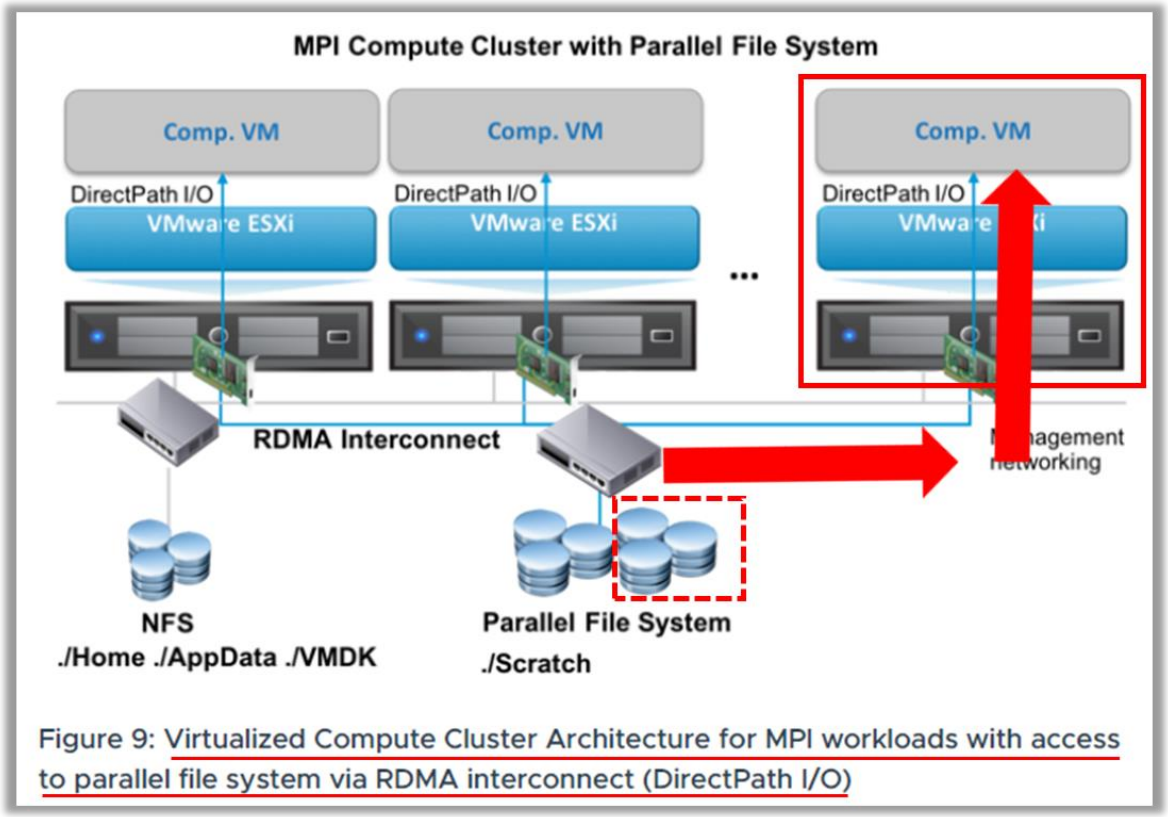
Claims 1 & 7

1-d wherein the second node reads the first data from the second parallel file system and places the first data in the second read queue.	A "VMware ESXi" host, i.e., second node, reads the first data from the second "Parallel File System" and places it its "RDMA App Buffers", i.e., second write read queue. The "VMware ESXi" host, i.e., second node, reads the first data from the second "Parallel File System" by utilizing the "RDMA Interconnect over a Host Channel Adapter (HCA).  Source: The Basics of Remote DirectMemory Access (RDMA) in vSphere), p.5 https://core.vmware.com/api/checkuseraccess?referer=/sites/default/files/resource/the_basics_of_remote_direct_memory_access_rdma_in_vsphere_noindex.pdf_ (annotations added)

UMBRA TECHNOLOGIES LTD.'S FIRST INFRINGEMENT ANALYSIS

U.S. Patent No. 11,146,632– Defendant VMware Inc. - UMBRA Technologies Ltd. ("UMBRA")

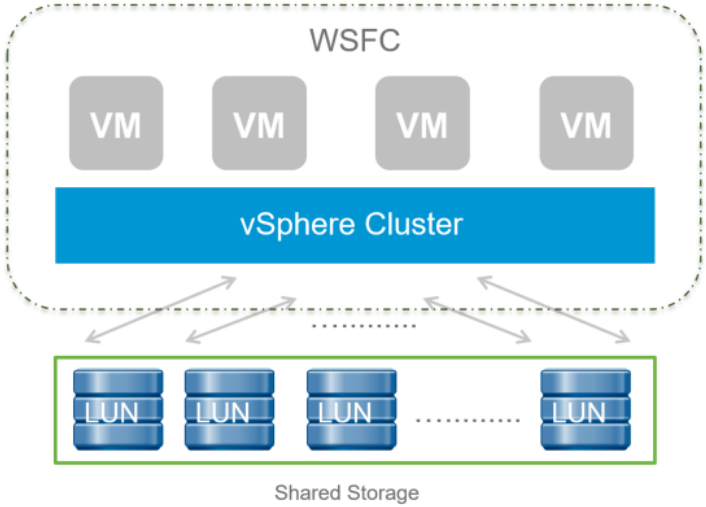
Claims 1 & 7

1-d Cont.	 Figure 9: Virtualized Compute Cluster Architecture for MPI workloads with access to parallel file system via RDMA interconnect (DirectPath I/O) Source: Virtualized High PerformanceComputing (HPC) ReferenceArchitecture (Part 2 of 2), https://blogs.vmware.com/apps/2018/09/vhpc-ra-part2.html_ (annotations added)

UMBRA TECHNOLOGIES LTD.'S FIRST INFRINGEMENT ANALYSIS

U.S. Patent No. 11,146,632– Defendant VMware Inc. - UMBRA Technologies Ltd. ("UMBRA")

Claims 1 & 7

Claim #7	Accused Instrumentalities
7. The network system of claim 1, further comprising a third node comprising a third read queue, a third write queue, and a third parallel file system; wherein the first node writes first data from the first write queue to the second and third parallel file systems at the same time; and wherein the third node reads the first data from the third parallel file system and places the first data in the third read queue.	See: https://core.vmware.com/resource/whats-new-vsphere-67-core-storage#sec6913-sub3  Image Address: https://core.vmware.com/sites/default/files/image(195).png There are multiple PFS drives as LUN – (Logical Unit Number) in VMFS (VMware filesystem) datastore. Because there are multiple devices, there is a first, a second, a third, and an … nth device.

UMBRA TECHNOLOGIES LTD.'S FIRST INFRINGEMENT ANALYSIS

U.S. Patent No. 11,146,632– Defendant VMware Inc. - UMBRA Technologies Ltd. ("UMBRA")

Claims 1 & 7

Caveat: The notes and/or cited excerpts utilized herein are set forth for illustrative purposes only and are not meant to be limiting in any manner. For example, the notes and/or cited excerpts, may or may not be supplemented or substituted with different excerpt(s) of the relevant reference(s), as appropriate. Further, to the extent any error(s) and/or omission(s) exist herein, all rights are reserved to correct the same.